



Your Origin & Cause Solution

By:

Jason Karasinski

Sr. Fire & Explosion Consultant

Jason@frtinvestigation.com

315-553-2420

Fire Research & Technology, LLC

FRT 20-047

Prepared for: Estate of Charles Hollowell

Report Finalized: 10/14/2024

Executive Summary of the Fire Investigation:



Figure 1: Loss location

DESCRIPTION OF SERVICES:

Fire Research & Technology, LLC was requested to write a report of our conclusion regarding the origin and cause of the above-captioned fire.

SERVICES CONDUCTED IN PREPERATION OF THIS SUMMARY:

- Reviewed physical documentation provided from the scene
- Review of FRT scene documentation
- Scene examination on 2/27/2020
- Joint scene examination on 2/27/2020
- Joint lab examination of evidence on 10/27/2020
- Review of Local Reports/Statements
 - Deposition of Carol Marcellin
 - Alleghany Fire Investigation report
- Review of NFPA 921- Guide for Fire and Explosion Investigations; 2024 Ed.
- Review of NFPA 1033- Standard for Professional Qualifications for Fire Investigator; 2022 Ed.
- Review of documents provided by FOIA request to Allegany County.
- Review of report authored by Andy Litzinger.
- Review of report authored by Dr. Steve Martin.

SYNOPSIS:

This investigator was retained by the Estate of Charles Hollowell to complete an origin and cause investigation for the fire that occurred at 192 Bells Brook Road, Ceres, NY. The fire resulted in the death of Charles Hollowell.

METHODOLOGY USED FOR INVESTIGATION:

The basic methodology utilized for this investigation is outlined in National Fire Protection Association (NFPA) 921, Guide for Fire and Explosion Investigations, 2024 edition. The scientific method was used during all aspects of this origin and cause analysis. This systematic approach is required by NFPA 1033-Standard for Professional Qualifications for Fire Investigator and outlined in Chapter 4 of NFPA 921.

NFPA 1033-2022 Edition: A.4.1.2

The basic methodology for fire investigation involves collecting data, then developing and testing hypotheses (See NFPA 921, Chapter 4-Basic Methodology). The methodology recommended is the scientific method. Key steps in the scientific method are as follows:

- (1) Recognize the Need (identify the problem)
- (2) Define the Problem
- (3) Collect Data
- (4) Analyze the Data
- (5) Develop the Hypotheses (Inductive Reasoning)
- (6) Test the Hypotheses (Deductive Reasoning)
- (7) Select Final Hypothesis

Developing hypotheses is an ongoing process of data collection and evaluation that happens throughout the investigation. Hypotheses are generally developed and tested for evaluating fire spread and growth, evaluating the nature of fire patterns, and determining origin, cause, and responsibility. Testing of hypotheses can be either experimental or cognitive. Ultimately, the hypotheses and conclusions reached are only as dependable as the data used or available. Each investigator must apply a level of confidence in that opinion. For additional information regarding evaluation methods see ASTM E 678, Standard Practice for Evaluation of Scientific or Technical Data.

NFPA 921-2024 Edition: 3.3.171 Scientific Method

The systematic pursuit of knowledge involving the recognition and definition of a problem; the collection of data through observation and experimentation; analysis of the data; the

formulation, evaluation, and testing of a hypothesis; and, where possible, the selection of a final hypothesis.

Figure 2 illustrates the flow chart of the scientific method as set forth by NFPA 921-2024 edition.

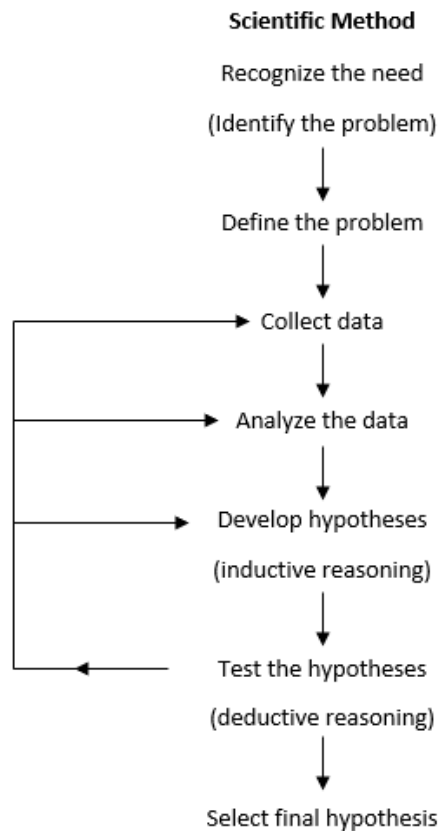


Figure 2: NFPA 921 Figure 4.3: Use of the Scientific Method

Origin Analysis:

NFPA 921-2024 Edition: 18.1.2 Determination of the origin of the fire involves the coordination of information derived from one or more of the following:

(1) Witness Information and/or Electronic Data. The analysis of observations reported by persons who witnessed the fire or were aware of conditions present at the time of the fire as well as the analysis of electronic data including but not limited to security camera footage, alarm system activation, or other such data recorded in and around the time of the fire event. (see Chapter 14)

(2) Fire Patterns. The analysis of effects and patterns left by the fire, which may include patterns involving electrical conductors (see Chapter 6).

(3) Fire Dynamics. The analysis of the fire dynamics [i.e., the physics and chemistry of fire initiation and growth (see Chapter 5) and the interaction between the fire and the building's systems (see Chapter 7)]

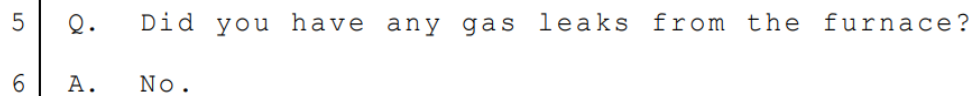
These are several forms of data that can be gathered and analyzed from a fire event that relate to the origin of a fire as stated in NFPA 921, 2024 edition.

The following data collection was used to formulate expert opinion as it pertains to the origin and cause.

(1) Witness information and/or Electronic Data:

The following were taken from Carol Marcellin's deposition unless otherwise specified.

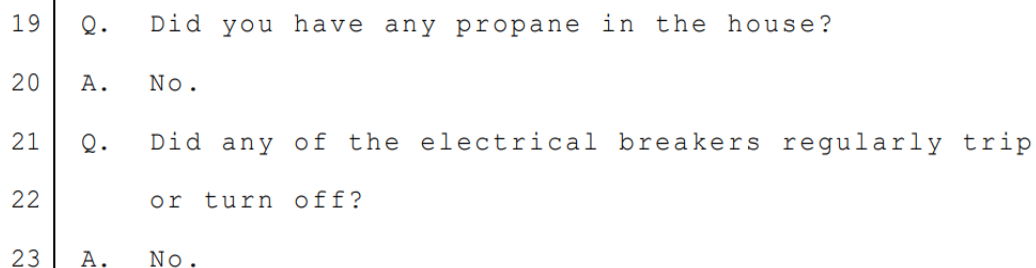
Mrs. Marcellin described in her deposition that she did not have any gas leaks with her furnace.



5 | Q. Did you have any gas leaks from the furnace?
6 | A. No.

Figure 3: Page 15 of Carol Marcellin deposition.

Mrs. Marcellin described she did not have any propane in the house and that she had no known electrical issues causing breakers to trip or turn off.



19 | Q. Did you have any propane in the house?
20 | A. No.
21 | Q. Did any of the electrical breakers regularly trip
22 | or turn off?
23 | A. No.

Figure 4: Page 15 of Carol Marcellin deposition.

Mrs. Marcellin was questioned about candles, and she stated they used them in the past but not recently. She described them being stored in a drawer in the back bedroom.

16	Q. Did either of you use candles?
17	A. Actually, we had in the past on occasion, but
18	they had all been stored in a drawer in the back
19	bedroom.
20	Q. And why --
21	A. Fire inspectors had found them and noticed that
22	they hadn't been used.

Figure 5: Page 16 of Carol Marcellin deposition.

Mrs. Marcellin was shown Exhibit 3 during her deposition and asked about a candleholder. Mrs. Marcellin described that was never used as a candle holder.

11	A. This appears to be my computer room, sewing room.
12	Q. And I'm going to show you with my mouse. I don't
13	know if you can see this movement right here.
14	I'm circling with the mouse on the wall. Is that
15	kind of a sconce or a candleholder attached to
16	the wall there?
17	A. I truly don't remember that being there.
18	Q. Did you ever use that for candles?
19	A. No.

Figure 6: Page 17 of Carol Marcellin deposition.

Mrs. Marcellin was asked if she or Charles smoked. Mrs. Marcellin confirmed that she has never smoked, and Charles quit in 2004. The 2004 date was confirmed by Mr. Hollowell's daughter Jessica Lori Hollowell-McKay during the deposition.

21 Q. Do you smoke?
 22 A. No.
 23 Q. Were you ever a smoker?

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 1 A. No.
 2 Q. Did Charles smoke?
 3 A. Not at that time. He had quit.
 4 THE WITNESS: What year did you quit smoking?
 5 JESSICA LORI HOLLOWELL-McKAY: 2004.

Figure 7: Pages 21-22 of Carol Marcellin deposition.

Mrs. Marcellin was questioned if vaping devices were used in the home, and she confirmed they were not used.

22 Q. Did he use any sort of an electronic nicotine
 23 device like vaping?

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1 A. No.

Figure 8: Pages 22-23 of Carol Marcellin deposition.

Mrs. Marcellin was asked about the electric chair that Charles used. She was asked if it was used daily, if there were issues with it, and if it has ever been repaired. She stated it was not used every day most recently because of the height of the couch. She also confirmed that there were no issues or repairs made to it.

10 A. An electric couch?

11 Q. Yes. With like the heating coils or anything --

12 A. Oh, yeah. That was the type that had the --

13 well, it's like a lounge chair type thing. The

14 middle of it -- the sections on either end would

15 recline as a recliner.

16 Q. Did he or you use that on a daily basis?

17 A. Towards the end, no, because the couch was too

18 low for him to get back up off of easily.

19 Q. Did you ever have any problems with that couch?

20 A. No.

21 Q. Did you ever have any repairs or service done to

22 it?

23 A. No.

Figure 9: Page 61 of Carol Marcellin deposition.

Mrs. Marcellin was asked if Charles used the computer at all. She confirmed he did not.

4 Q. Did he use a computer at all?

5 A. No.

Figure 10: Page 69 of Carol Marcellin deposition.

Mrs. Marcellin was asked if the subject laptop HP Pavilion laptop) had ever been serviced or any maintenance done. She confirms that neither had been done.

21 Q. Did you ever have any service or maintenance done
 22 to it?
 23 A. No.

Figure 11: Page 73 of Carol Marcellin deposition.

Mrs. Marcellin was questioned regarding the subject laptop. During this questioning, she confirms that it was never serviced, and no maintenance was performed by anyone. Additionally, she confirmed that no modifications were made to the laptop after she purchased it. It was never dropped and was not damaged. When asked if she ever had any problems with it, she states the only problem was when Windows 7 came out, her laptop would not support it.

1 Q. Did you ever take it anywhere to be serviced?
 2 A. No.
 3 Q. Did anyone ever come to the house to perform
 4 maintenance or service?
 5 A. No.
 6 Q. Were any modifications made to it by you or at
 7 your direction?
 8 A. No.
 9 Q. Were any modifications made to it after you
 10 purchased it, to your knowledge?
 11 A. No.
 12 Q. Was it ever dropped?
 13 A. No.
 14 Q. Was it ever damaged?
 15 A. No.
 16 Q. Did you have any problems or incidents with it
 17 prior to the incident?
 18 A. The only problem I had was when the Window 7
 19 platform dropped. They weren't supporting it
 20 anymore. I had wanted to transfer my information

Figure 12: Page 74 of Carol Marcellin deposition.

Mrs. Marcellin was further questioned about the subject computer. During this line of questioning, she explained she did not have any issues with the subject computer prior to the incident. It did not run hot. She only used the power cord it came with, and did not purchase another one for the subject computer. She confirmed she did have the computer plugged in overnight at the time of the incident, but explained that it was the first time she had ever left it plugged in. She described using the computer almost every day for emails and online shopping.

11 Q. Did you have any other problems or issues with
12 the subject computer prior to the incident?
13 A. No.
14 Q. Did it ever run hot?
15 A. No.
16 Q. Did you ever get a different power cord for it?
17 A. No.
18 Q. Did you use the power cord that came with it?
19 A. Yes.
20 Q. And did you continue to use that power cord up
21 until the incident?
22 A. Yes.
23 Q. Did you have that power cord plugged in at the

1 time the incident occurred?
2 A. Yes.
3 Q. Had you ever left it plugged in overnight
4 previously?
5 A. No.
6 Q. How often did you use the subject laptop in the
7 months before the incident?
8 A. Almost every day.
9 Q. What did you use it for?
10 A. Mostly e-mailing, online shopping.

Figure 13: Page 76-77 of Carol Marcellin deposition.

Mrs. Marcellin was asked where she kept the subject computer. She explained that it was normally on her desktop in the office of the home, and that she had only used it a couple of times in the kitchen to show Charles things.

13 Q. Did you keep the subject computer in a certain
14 place in your house?
15 A. Yes.
16 Q. Where?
17 A. Usually on my desktop.
18 Q. In the office?
19 A. Yes.
20 Q. Did you ever use it in other rooms of the house?
21 A. There had been a couple of times that I had used
22 it in the kitchen at the table with Chuck, for
23 him to view something that would have been of

Figure 14: Page 77 of Carol Marcellin deposition.

Mrs. Marcellin was asked if anyone else used the subject laptop and she stated that no one else used it.

6 Q. Did anyone else ever use it?
7 A. No.

Figure 15: Page 78 of Carol Marcellin deposition.

Mrs. Marcellin was asked about the 2019 Laptop. She stated she had never used the 2019 power cord in any other computer and had never had maintenance or service done to it.

22 Q. Did you ever use the power cord from the 2019
23 computer in the other computer?

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1 A. No.

2 Q. In any other computer?

3 A. No.

4 Q. Did you have any service or maintenance done to
5 the 2019 computer?

6 A. No.

Figure 16: Page 91-92 of Carol Marcellin deposition.

Mrs. Marcellin was asked where the 2019 Laptop was at the time of the fire. She answered that it was across the room from the subject computer, on top of what was actually part of her sewing kit.

7 Q. Where did you -- where was the 2019 computer at
8 the time the incident occurred?
9 A. Sitting across the room on -- what was actually
10 part of my sewing kit.

Figure 17: Page 92 of Carol Marcellin deposition.

Mrs. Marcellin was questioned regarding her 1990's Compaq laptop and where it was stored. She confirmed it was stored in the closet in the office in a laptop bag.

23 | Q. And you said that the Compaq from the '90s was in

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1 the closet in the office at the time of the
2 incident; is that correct?

3 A. Yes. It's in a laptop bag inside the closet
4 that's in that room.

Figure 18: Page 93-94 of Carol Marcellin deposition.

Mrs. Marcellin was further questioned about the Compaq laptop. She confirmed it was in the closet on the floor at the time of the incident. She did not have any maintenance or service done to it and she did not have any problems with it.

20 Q. And that Compaq, was that on the floor of the
21 closet in your office at the time the incident
22 occurred?
23 A. Yes, it was.

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1 Q. Did you ever have it serviced, maintained?
2 A. No.
3 Q. Did you ever have any problems with it?
4 A. No.

Figure 19: Page 95-96 of Carol Marcellin deposition.

Mrs. Marcellin was questioned about the battery she bought for the Compaq laptop. She confirmed that it was put in the Compaq laptop, and the laptop turned on properly afterwards, but noted that that it was very slow even after the battery change. She further confirmed she did not put the battery in the subject computer.

11 Q. Is it possible that the battery you purchased
12 online was put in the subject laptop rather than
13 the Compaq?
14 A. Oh, no. Would not have. Never.
15 Q. When you installed the new battery in the Compaq,
16 did it show confirmation on the screen that it
17 had been done?
18 A. Yes. And it actually operated fine, except very
19 slow. That's why I eventually moved on to buying
20 a new laptop.

Figure 20: Page 100 of Carol Marcellin deposition.

Mrs. Marcellin was further questioned on the Compaq laptop. She did not have any problems after the new battery was installed, it did not run hot, she did not have any service or maintenance completed after new battery was installed, and she recycled the old battery at a recycling facility.

9 Q. Did you have any problems or issues with it after
10 the time you installed the battery up until the
11 time you stopped using it?
12 A. No.
13 Q. Did that computer ever run hot?
14 A. No.
15 Q. Did you have any service or maintenance done to
16 the Compaq after installing the new battery?
17 A. No.
18 Q. What did you do with the original battery for the
19 Compaq?
20 A. It was taken to a recycle center somewhere like
21 Home Depot where they accept, you know, the
22 batteries to dispose of.

Figure 21: Page 101 of Carol Marcellin deposition.

Mrs. Marcellin was shown Exhibit 3 and asked about it. She described the picture looking at her sewing table with the 2019 Laptop (that was also lost in the fire) on it.

- 12 Q. Is this the office in your house?
- 13 A. Yes. Office -- you're looking at a sewing table
- 14 straight in front of you with a laptop sitting on
- 15 to top of it, but it is not the subject laptop.
- 16 It is the new one that was purchased at
- 17 Christmastime in 2019 that also was lost in the
- 18 fire.
- 19 Q. And that was what my question is. This computer
- 20 right here, that's the 2019 laptop, correct?
- 21 A. Yeah. Yeah.

Figure 22: Page 103 (showing her exhibit 3) of Carol Marcellin deposition.

Mrs. Marcellin was shown exhibit 2 and asked to describe what it depicts. She described it depicting the armoire with the subject laptop and the monitor from her old computer.

- 15 Q. Ms. Marcellin, showing you Exhibit 2, can you
- 16 tell me what this depicts?
- 17 A. Yes. That would be the armoire unit that housed
- 18 the subject laptop, and the monitor from the
- 19 older desktop set that I had -- that I still had
- 20 in that unit.

Figure 23: Page 104 (Showing her Exhibit 2) of Carol Marcellin deposition.

Mrs. Marcellin was further asked about Exhibit 2. She explained that the open laptop is the subject laptop, and when asked about a keyboard being on the desk, she stated she may have kept it from the old computer but could not remember for sure. She thought it may have been the keyboard from the old three-piece computer.

3 Q. And then sort of right below that, there's an
 4 open laptop. Is that the subject computer?
 5 A. That's the subject laptop.
 6 Q. Is there a keyboard located kind of behind that?
 7 A. It could be. I might have kept that. I do not
 8 recall.
 9 Q. Do you recall having a keyboard there at the time
 10 of incident?
 11 A. I don't really recall that, but it could have
 12 been the keyboard from the old three-piece set.

Figure 24: Page 105 (referring to exhibit 2) of Carol Marcellin deposition.

Mrs. Marcellin was questioned about an item in Exhibit 2. She was asked if it was a computer tower. She stated she could not remember what the item was, but did not think it was the computer tower because she thought she disposed of that before the fire.

14 Can you identify what is kind of on the
 15 bottom left of the subject laptop? And I can
 16 zoom in if you'd like.
 17 A. I cannot remember what that would have been.
 18 Q. Did you have a computer tower from any other
 19 computer at that time?
 20 A. Yeah, that three-piece unit. But that would have
 21 been long gone, I believe before that fire. I
 22 don't know. It doesn't quite look like the tower
 23 that I had. I don't know.

Figure 25: Page 105 of Carol Marcellin deposition.

Mrs. Marcellin was asked about the condition in which she left the laptop the night before the fire. She stated it was left open, but was not hanging over the edge like it is in the exhibit. She was asked about a printer, and she stated it was to the right of the armoire on the file cabinet.

13 Q. And how did you leave the laptop that day when
14 you went to bed?
15 A. I left it open, but it would not have been
16 hanging off the shelf like it is there.
17 Q. Was it on --
18 A. On the shelf fully.
19 Q. But just not hanging off like shown here?
20 A. No.
21 Q. Did you have a printer?
22 A. Yes, I did. It would have been to the right of
23 the armoire, sitting on top of the file cabinet I

Figure 26: Page 107 of Carol Marcellin deposition.

Mrs. Marcellin was asked if she had any aides (to help Charles) that smoked. She stated that if the aides did smoke, they smoked outside because she did not allow smoking in the house.

9 Q. Thank you. Did any of the aides that came smoke?
10 A. If they did, they took a break outside because I
11 didn't allow smoking in my home by anyone.

Figure 27: Page 118 of Carol Marcellin deposition.

Mrs. Marcellin was asked what her normal routine was for the subject laptop regarding how she normally kept it at night. She explained that she would go through the start menu to shut the computer down, unplug it, close it, wrap the cord around the laptop, and close it in her armoire.

9 A. Oh, yes. Turn it off, unplug it, wrap the cord
10 around it and close it up in my armoire, because
11 I had a cat that I always worried about chewing
12 on the wires. So I closed it off always to
13 prevent that issue.

14 Q. And when you shut it down previously, would you
15 go through the process of using like the start
16 button on the computer and then selecting
17 shutdown, or would you just kind of close the
18 lid?

19 A. Oh, no. I went through the process.

Figure 28: Page 121 of Carol Marcellin deposition.

Mrs. Marcellin explained her route of travel taken after being awakened by the smoke alarm the morning of the fire and described what she saw in relation to the diagram she was shown.

22 Can you take me through the route that you
23 took upon waking up on January 24th of 2020,

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1 using this diagram?

2 A. Yeah. Chuck and I were sleeping in that lower --
3 that bedroom on the lower side. I opened the
4 door and silenced the fire alarm that's
5 immediately outside on the wall there because I
6 didn't want it frightening him. I could smell
7 smoke. I knew there was something going on,
8 hoping it was just the furnace. Maybe it had

7 smoke. I knew there was something going on,
8 hoping it was just the furnace. Maybe it had
9 malfunctioned and was putting out smoke or
10 something, and I could shut that down.

11 But I went back through the kitchen -- past
12 that bathroom, through the kitchen, and then I
13 got into the living room. When I stepped to the
14 right to go down that hall, I could see the glow
15 of the fire coming from that room where the
16 laptop was.

17 I immediately backtracked to the kitchen,
18 grabbed a fire extinguisher and hoped that when I
19 got to the doorway I would be able to take care
20 of it, but when I got there, it was already
21 putting out fireballs, whatever they call them,
22 from the battery pack apparently, sending them up
23 to the ceiling. It was catching on fire and

1 dropping from the ceiling, so I couldn't go in.

2 Q. Did you attempt to use the fire extinguisher?

3 A. No, because it was already flying too much and
4 wasn't -- I'm not a professional firefighter and
5 I figured, if anything, I would probably spread
6 that flame because it was already out of control
7 for an individual to handle.

Figure 29: Page 123-125 of Carol Marcellin deposition.

Mrs. Marcellin was questioned about what she saw as she stood in the door of the sewing room/office, specifically what she saw on fire.

12 Q. We've got to quickly talk about that night one
13 more time and that will be it for me.

14 When you went into your sewing room, where
15 -- strike that. When you went into the sewing
16 room, was there -- when you stood outside and
17 looked inside the sewing room, was there one area
18 of the room that seemed to have more fire than
19 other parts of the room?

20 A. Oh, yeah. Definitely the armoire, the wall
21 behind it, the computer desk, you know. Took a
22 while to get to the side that was actually used
23 for the sewing area.

Figure 30: Page 212 of Carol Marcellin deposition.

The following is an excerpt from the Alleghany County fire report.

The fire investigation team began working from least to most damage.

The master bedroom, (located B side) where Mr. Hollowell was reported found lying crosswise on the bed (pic 12, 13, 14) with only his feet touching the floor, had only smoke and soot damage. The Kitchen / Dining room showed heat and smoke damage. The area closer to the Living room was where more heat damage (pic 16) was observed. The Living room C side (pic 19) had less fire and heat damage than the A Side (pic 21). The Hall way that lead to the Office, Bathroom, and second Bedroom had fire damage on both (A, C) sides (pic 24) about 4 feet off the floor. During the time of the fire the door to the second Bedroom on the (D side) of the trailer was closed. The second Bedroom showed only heat and smoke damage (pic 36).

The living room on the (A Side) did have significant damage in the area of the couch. The couch was an electric couch with heating coils built in. We were able to verify that it was not plugged in, and later when interviewed, Mrs. Marcellin confirmed this. We were able to rule out the gas furnace. The wooden louvered door for the furnace did not show signs of charring on the inside (pic 24, 25). Electrical wires and the hardwired smoke detector (pic 27) located in the hallway between the furnace and Office door was inspected. The remains of the smoke detector were found on the floor below its mounting plate near the ceiling. The wiring for this smoke detector and light switches were observed and eliminated as the cause. During my interview at Olean General Hospital Mrs. Marcellin stated that the smoke detector alerted her to the fire. Next we observed the Office area for fire damage (Pic 28- 32) (52-59). The storage closet (A side) in the Office had some of the lowest burn. We pulled out the clothing (Pic 58) and found that the floor was protected. We did not find any wires or source of ignition.

Figure 31: Bottom, p. 1 of Fire Report.

Figure 32 details the fire department findings on page 2 of the Alleghany County fire report.

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Upon looking more closely at a HP laptop computer located on a pull-out shelf of a computer cabinet (Pic 59-62) the FI team saw unusual looking damage to the area between the keyboard and the screen (Pic 60). We picked up the HP laptop and observed additional damage to the paper (Pic 61) under the battery cover area. We also observed damage to the battery cover and the battery located in the laptop. (Pic 62, 69). This area of the battery cover showed an inconsistency with damage from a fire spread. It should have been a protected area. We confirmed that this HP Laptop was plugged in (Pic 66, 67). We also confirmed that breaker # 4 (Pic 50, 51) had been tripped. It had a sub label as LR.

Based upon our observation and ruling out other probable causes it is our hypothesis that the cause of the fire is the HP laptop. The HP laptop battery or components near the battery caused the battery to overheat and explode, sending sparks and flammable material that ignited light weight fuels in the office area of the computer cabinet or closet.

Figure 32: Page 2 of fire report (fire department findings).

Investigator Luckey's interview with Carol Marcellin was included on page 2 of the Alleghany County Fire Report.

Interview by this FI AL51 Luckey with Carol Marcellin in the Emergency Room of Olean General Hospital at 09:00 1/24/2020.

I found Mrs. Marcellin alert and tentative in her ER room with an oxygen mask on. She was being tended to by nursing staff with several family members in the room. I asked if it was ok to ask some questions and Carol replied yes. I introduced myself to her and her family and confirmed with her that she had been advised by the NYSP that Mr. Hollowell did not survive. I asked about her relationship to Mr. Hollowell, her son Fred Marcellin (716-307-4412) answered that it was her boyfriend. I then asked Mrs. Mrs. Marcellin to walk me through the events of the day.

Mrs. Marcellin said that she woke up to the sound of the smoke detector alarm. Mrs. Marcellin got out of bed and went to investigate. Mrs. Marcellin could smell something electrical burning and could see light smoke coming from the Office. When Mrs. Marcellin entered the Office she saw flames, smoke and splatter of flaming pieces coming from the laptop. Mrs. Marcellin then got a fire extinguisher (Pic 17) and tried to put the fire out. Mrs. Marcellin reported that this was not working so she went to their bedroom and tried to get Mr. Hollowell out of the house. Mr. Hollowell fell to the floor due to his health condition and Mrs. Marcellin was unable to lift him. Mrs. Marcellin tried several times but the smoke now was so intense she had to get out. Mrs. Marcellin could not reach her phone now due to the smoke. Mrs. Marcellin exited the home through the door on the (C side) (Pic 9, 10) that lead to the Garage (B Side). Mrs. Marcellin drove her car out of the Garage (Pic 2) and tried to use her ONSTAR Telematics to report the fire. The ONSTAR Telematics did not connect and Mrs. Marcellin had to drive down Bells Brook Road toward 417 to get a connection. Mrs. Marcellin provided our 911 center a good report which included the exact location of where she last saw Mr. Hollowell and his mobility limitations.

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Figure 33: Page 2 of the fire report (interview with Mrs. Marcellin).

(2) Fire Patterns:

Fire effects and patterns observed on the exterior and interior of the structure were analyzed and interpreted. The fire effects and patterns were indicative of the fire originating in the office and spreading to other areas of the home which is consistent with witness information.

Exterior:

The exterior of the house was relatively unaffected by fire. Ventilation patterns were not observed on the exterior of the structure. The fire did not originate on the exterior of the house. This is consistent with NFPA 921 6.4.2.

NFPA 921 6.4.2 Ventilation-Generated Patterns.

Ventilation of fires and hot gases through windows, doors, or other openings in a structure greatly increases the velocity of the flow over combustible materials. In addition, well-ventilated fires burn with higher heat release rates that can increase the rate of char and spall concrete or deform metal components. Areas of great damage are indicators of a high heat release rate, ventilation effects, or long exposure. Such areas, however, are not always the point of fire origin. For example, fire could spread from slow-burning fuels to rapid-burning fuels, with the latter producing most of the fire damage. Ventilation effects become particularly important in a fully involved compartment fire.



Figure 34: A side and D side of home.



Figure 35: C Side and D side of home.



Figure 36: B side of home.

Interior:

Compartment fire development and phenomena are introduced beginning in NFPA Section 5.10 and are expounded upon in the sections that follow. Figure 37 (below) is taken from those sections and illustrates the development and spread of a compartment fire with hot gases.

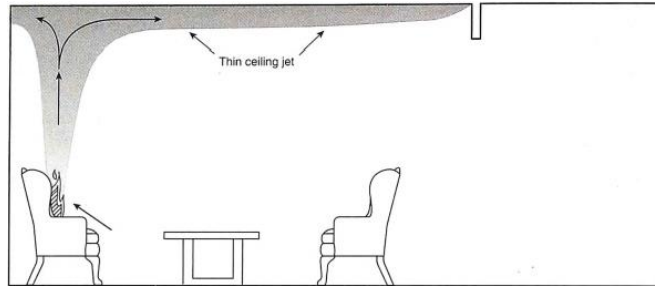


FIGURE 5.10.2.1 Early Compartment Fire Development.

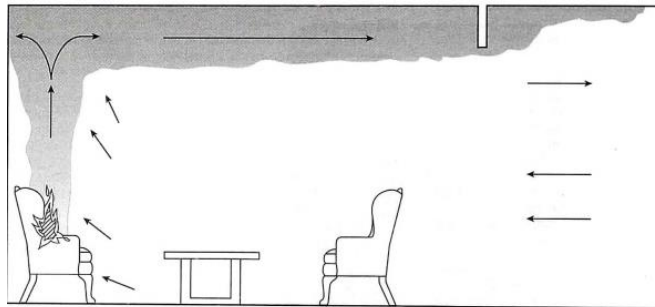


FIGURE 5.10.2.3 Upper Layer Development in Compartment Fire.

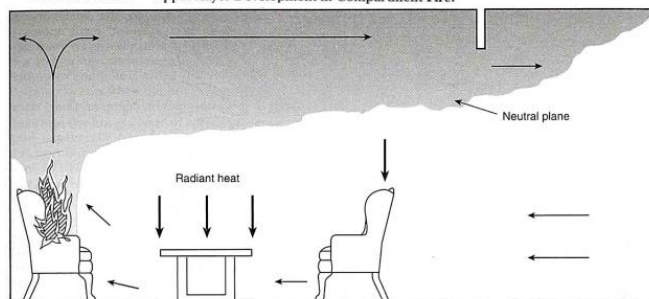


FIGURE 5.10.2.4 Preflashover Conditions in Compartment Fire.

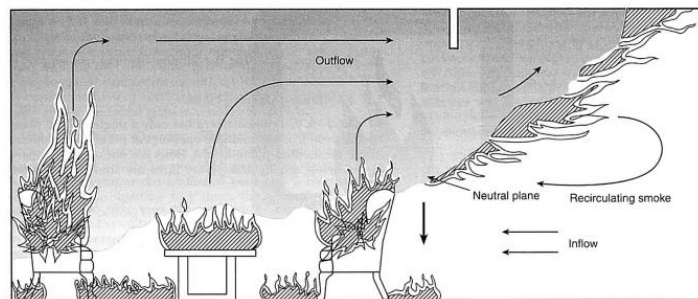


FIGURE 5.10.2.6 Flashover Conditions in Compartment Fire.

Figure 37: Illustration of the development of a compartment fire, from ignition to flashover, taken from NFPA 5.10.2.1 - 5.10.2.6.

Kitchen: Varying degrees of soot deposition (consistent with NFPA 921 6.1.2.2.2) was observed on the kitchen structural surfaces and contents. The greatest degree of soot accumulation was observed near the upper regions of the room. Surface charring (consistent with NFPA 921 6.2.2.1) was observed on wall mounted cabinets and the upper regions of a sliding glass door frame and pass-through opening. The damage observed in the living room was greater (in intensity and in surface area) than the damage in the kitchen, therefore FRT concludes that hot gases and smoke moved to the kitchen from the living room via the pass-through opening and the walkthrough opening.

NFPA 921 6.1.2.2.2 Deposition.

Soot, which is predominantly carbon, is produced from combustion of carbon-based fuels. Smoke and soot can deposit and settle out of the heated gases from the fire as they encounter cooler surfaces. Deposition of soot and smoke changes the color and texture of the surface. The observation of the lack of soot and smoke deposition is also important for fire investigators for reconstruction and location purposes.

NFPA 921 6.2.2.1 Char Observations.

Char is carbonaceous material that has been burned or pyrolyzed and has a blackened appearance. Charring may produce convex segments of carbonized material separated by cracks on the surface of the char. Charred material is likely to be found in nearly all structural fires.



Figure 38: Fridge side of kitchen.



Figure 39: Kitchen photo, continued.



Figure 40: Stove and sink of kitchen.

Living room: The living room was located in the middle of the structure, between the kitchen and the hallway. The living room was carpeted, the walls covered with decorative Luan wood panels, and the ceiling constructed with ceiling tiles. A line of demarcation was observed on the walls approximately 4 feet above the floor level. The line of demarcation indicated fire intensity and movement from the hallway to the living room. Surface charring was observed on the upper regions of the wood paneling. The greatest degree of charring and mass loss was observed on paneling where the hallway and living room were adjoined. Contents in the living room sustained varying degrees of fire, thermal, and soot damage. A sofa was located near the hallway, and it sustained the greatest degree of mass loss, charring, and discoloration when compared to other furniture in the room. Fire effects observed on the furniture and other contents in the living room were consistent with

radiant heat exposure from an upper hot gas ceiling layer in the room. This is consistent with NFPA 921 6.4.3.

NFPA 921 6.2.9.1 Mass Loss Observations.

Fires convert fuel and oxygen into combustion products, heat, and light. This process results in mass loss of the fuel (i.e., consumption of the material). During a fire, combustible and noncombustible materials may also lose mass due to evaporation, calcination, or sublimation.

NFPA 921 6.2.2.1 Char Observations.

Char is carbonaceous material that has been burned or pyrolyzed and has a blackened appearance. Charring may produce convex segments of carbonized material separated by cracks on the surface of the char. Charred material is likely to be found in nearly all structural fires.

NFPA 921 6.1.2.2.3 Discoloration.

Materials that are increased in temperature, change phase, and are chemically changed by exposure to heat often result in a change of color to the affected surface.

NFPA 921 6.4.3 Hot Gas Layer–Generated Patterns.

The radiant flux from the hot gas layer can produce damage to the upper surfaces of contents and floor covering materials. This process commonly begins as the environment within the room approaches flashover conditions. Similar damage to floor surfaces from radiant heat frequently occurs in adjacent spaces immediately outside rooms that are fully involved in fire. Damage to hallway floors and porches are examples. Protected surfaces may not exhibit any damage. At this time in the fire development, a line of demarcation representing the lower extent of the hot gas layer may form on vertical surfaces. The degree of damage generally will be uniform except where there is drop down, where there is burning of isolated items that are easily ignited, or where there are protected areas.

NFPA 921 6.3.1.3 Lines or Areas of Demarcation.

Lines or areas of demarcation are the borders defining the differences in certain heat and smoke effects of the fire on various materials. They appear between the affected area and adjacent, less-affected areas.



FIGURE 6.4.3(a) Hot Gas Layer Line of Demarcation Above Shelf.



FIGURE 6.4.3(c) Hot Gas Layer Line of Demarcation on Both Sides of Hallway.

Figure 41: Examples of lines of demarcation, generated by the presence of hot gas layers, taken from NFPA 6.4.3(a) & (c).



Figure 42: Hallway of the structure, showing a line of demarcation.



Figure 43: Living room, facing Hallway.



Figure 44: Living Room, facing Kitchen.

Hallway: The hallway floor was carpeted, the walls covered with Luan wood paneling, and the ceiling was composed of ceiling tiles. A line of demarcation was observed on the hallway walls which showed fire movement from the office with lateral movement in the hallway to the living room. The greatest degree of charring and mass loss on the hallway walls was closest to the ceiling. This is consistent with the presence of a hot gas layer, per NFPA 921 6.4.3.

NFPA 921 6.4.3 Hot Gas Layer–Generated Patterns.

The radiant flux from the hot gas layer can produce damage to the upper surfaces of contents and floor covering materials. This process commonly begins as the environment within the room approaches flashover conditions. Similar damage to floor surfaces from radiant heat frequently occurs in adjacent spaces immediately outside rooms that are fully involved in fire. Damage to hallway floors and porches are examples. Protected surfaces may not exhibit any damage. At this time in the fire development, a line of demarcation representing the lower extent of the hot gas layer may form on vertical surfaces. The degree of damage generally will be uniform except where there is drop down, where there is burning of isolated items that are easily ignited, or where there are protected areas.

NFPA 921 6.3.1.3 Lines or Areas of Demarcation.

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NFPA 921 6.2.2.1 Char Observations.

Char is carbonaceous material that has been burned or pyrolyzed and has a blackened appearance. Charring may produce convex segments of carbonized material separated by cracks on the surface of the char. Charred material is likely to be found in nearly all structural fires.

NFPA 921 6.2.9.1 Mass Loss Observations.

Fires convert fuel and oxygen into combustion products, heat, and light. This process results in mass loss of the fuel (i.e., consumption of the material). During a fire, combustible and noncombustible materials may also lose mass due to evaporation, calcination, or sublimation.



Figure 45: Furnace in hallway.



Figure 46: Hallway floor.



Figure 47: Fire damage outside office into hallway (red arrow indicates HP laptop).

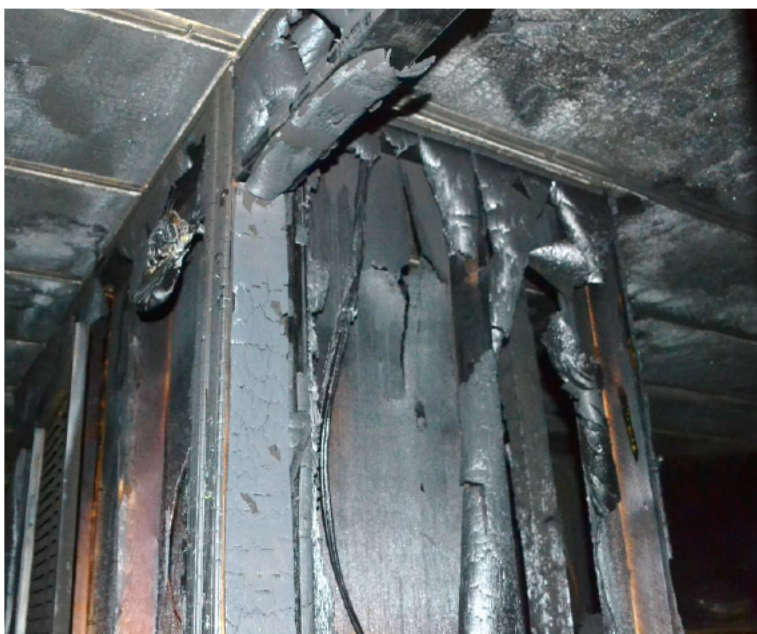


Figure 48: Ceiling area just outside opening to office in hallway.



Figure 49: Hallway, viewed from the Living Room.

Office: Consistent with the kitchen and living room décor, the office floor was carpeted, the walls covered with Luan wood panel and finished with tile ceiling. The office contained a desk with cushioned stool, an armoire and a bookshelf. There was a closet in the office. A line of demarcation was observed on the walls approximately 4 feet above floor level. The line of demarcation delineated a higher degree of fire damage on the upper regions of the walls when compared to the lower regions. The damage observed on the walls was consistent with a hot gas layer (per NFPA 921 6.4.3). The desk and cushioned stool sustained the greatest degree of thermal damage, on the top surfaces of each, from radiant heat exposure. The armoire contained an HP Pavilion laptop, monitor, and assorted lightweight combustibles (including paper). Melted plastic was observed on the laptop screen, resulting from downward dripping consistent with the computer being in an open position at the time of the fire. Pronounced damage by thermal and fire attack was observed on the computer around the battery compartment. The damage observed on the laptop was isolated, and inconsistent with (of greater intensity than) damage to other contents in the room.

A bookshelf was located to the left of the armoire. The contents on the bookshelf sustained varying degrees of fire damage within the room of origin. The greatest degree of fire damage was observed in the upper regions of the bookshelf, which (per NFPA 921 6.4.3) is consistent with the upper hot gas layer.

A closet was located to the left of the bookshelf. Fire patterns (formed by fire effects) that were observed on the closet door are consistent with the door being in an open position at the time of the fire. A metal frame portable ironing board was hung on the inside of the closet door. The ironing board frame sustained the greatest degree of oxidation on the side facing the closet and its upper region. Patterns observed on the ironing board are consistent with fire movement from the closet to the office. Most of the Luan wood panel walls in the closet were consumed, and shelves had collapsed. Burned contents were

located on the closet floor. During scene processing, the contents within the closet were removed, revealing protected flooring beneath.

The fire patterns (formed by fire effects) that were observed on the office door are consistent with the door being in an open position at the time of the fire. This then allowed the fire to progress from the office, and to spread vertically and horizontally along the path of least resistance, down the hallway via the open door.

The power cord for the laptop sustained only minimal thermal damage to the exterior coating of the cord. The outlet that the laptop cord was plugged into was undamaged. Battery remains were found directly adjacent to the laptop, on the floor and in the desk area of the armoire. There were also battery remains found in a can near the armoire. In following the scientific method set forth by NFPA 921 3.3.171 (see Figure 2, herein), Mr. Litzinger documented and evaluated the electrical system of the structure. Per his observations and documentation, he observed both circuit breaker #4 and the main breaker of the home in the OFF position. In contrast, Mr. Litzinger confirmed that circuit breaker #3 was the circuit providing power to the outlet into which the laptop was reported to be plugged, located on the C wall of the room of origin.

For additional information regarding the evaluation of the home's electrical system, see Andy Litzinger's report.

6.3.1.3 Lines or Areas of Demarcation.

Lines or areas of demarcation are the borders defining the differences in certain heat and smoke effects of the fire on various materials. They appear between the affected area and adjacent, less-affected areas.

NFPA 921 6.2.9.1 Mass Loss Observations.

Fires convert fuel and oxygen into combustion products, heat, and light. This process results in mass loss of the fuel (i.e., consumption of the material). During a fire, combustible and noncombustible materials may also lose mass due to evaporation, calcination, or sublimation.

NFPA 921 6.2.2.1 Char Observations.

Char is carbonaceous material that has been burned or pyrolyzed and has a blackened appearance. Charring may produce convex segments of carbonized material separated by cracks on the surface of the char. Charred material is likely to be found in nearly all structural fires.

NFPA 921 6.2.11 Oxidation.

6.2.11.1 Observations.

The effects of oxidation include change of color and change of texture. The higher the temperature and the longer the time of exposure, the more pronounced the fire effects

resulting from oxidation will be. The extent of post-fire oxidation will be a function of the ambient humidity and exposure time.

NFPA 921 6.4.3 Hot Gas Layer–Generated Patterns.

The radiant flux from the hot gas layer can produce damage to the upper surfaces of contents and floor covering materials. This process commonly begins as the environment within the room approaches flashover conditions. Similar damage to floor surfaces from radiant heat frequently occurs in adjacent spaces immediately outside rooms that are fully involved in fire. Damage to hallway floors and porches are examples. Protected surfaces may not exhibit any damage. At this time in the fire development, a line of demarcation representing the lower extent of the hot gas layer may form on vertical surfaces. The degree of damage generally will be uniform except where there is drop down, where there is burning of isolated items that are easily ignited, or where there are protected areas.

NFPA 6.3.3.3 Protected Areas.

Closely related in appearance to the resulting pattern of heat shadowing is a protected area. A protected area results from an object preventing the products of combustion from depositing on the material that the object protects or preventing the protected material from burning. The object may be a solid or liquid, combustible or noncombustible. Any object that prevents the deposition of the products of combustion, or prevents the burning of the material, may produce a protected area. Figure 6.3.3.3(a) through Figure 6.3.3.3(d) provide examples.



FIGURE 6.3.3.3(a) Photograph on Top, Showing Protected Area; Photograph at Bottom, Showing How the Chair Was Positioned During the Fire.

Figure 50: Example of a protected area, taken from NFPA 6.3.3.3(a).

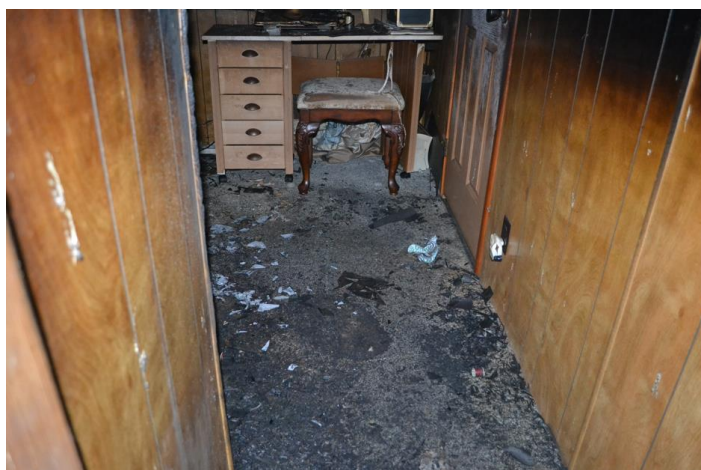


Figure 51: Floor, entry to office.



Figure 52: Office, sewing table straight ahead, armoire to left in photo.



Figure 53: Closet within the office.

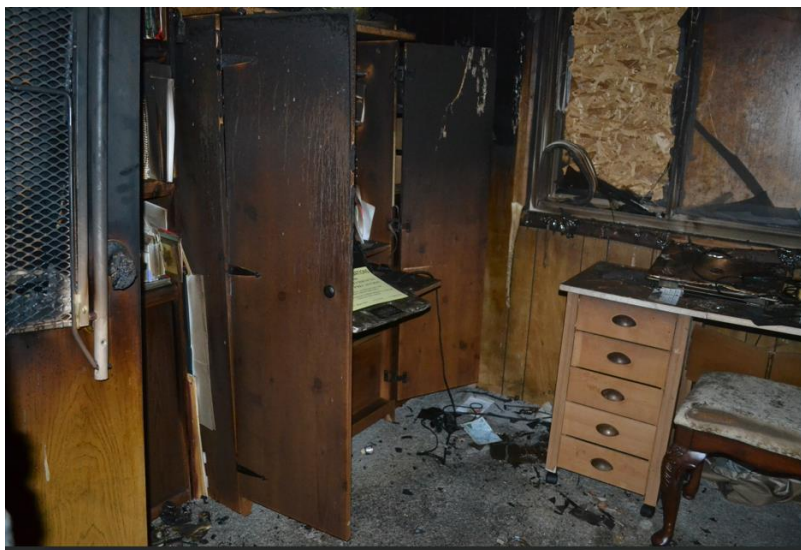


Figure 54: Area of origin.



Figure 55: Close-up of the area of origin.



Figure 56: Keyboard area of HP Pavilion Laptop.



Figure 57: The red highlight encircles the battery remains reported as the HP Pavilion laptop.



Figure 58: Under-side of HP Pavilion Laptop.



Figure 59: HP Pavilion Laptop battery remains documented within the room of origin.



Figure 60: Additional battery remains from HP Pavilion Laptop documented within the room of origin.



Figure 61: Battery foil and battery vent cap remains, documented within the room of origin.

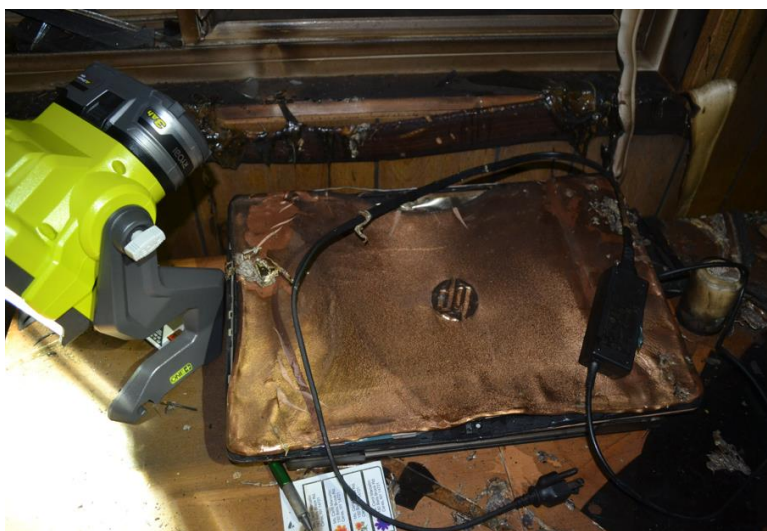


Figure 62: Remains reported as the HP Pavilion Laptop, including power cord (still intact).

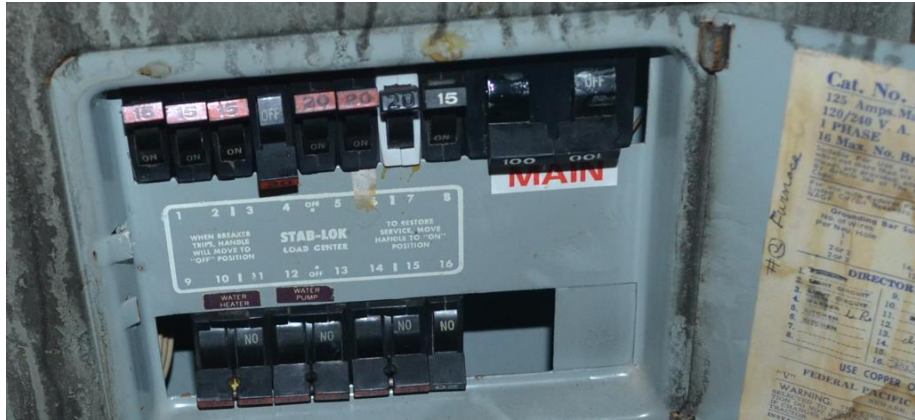


Figure 63: Breaker number 4, documented in the off position (Labeled 'L.R.', to the right).

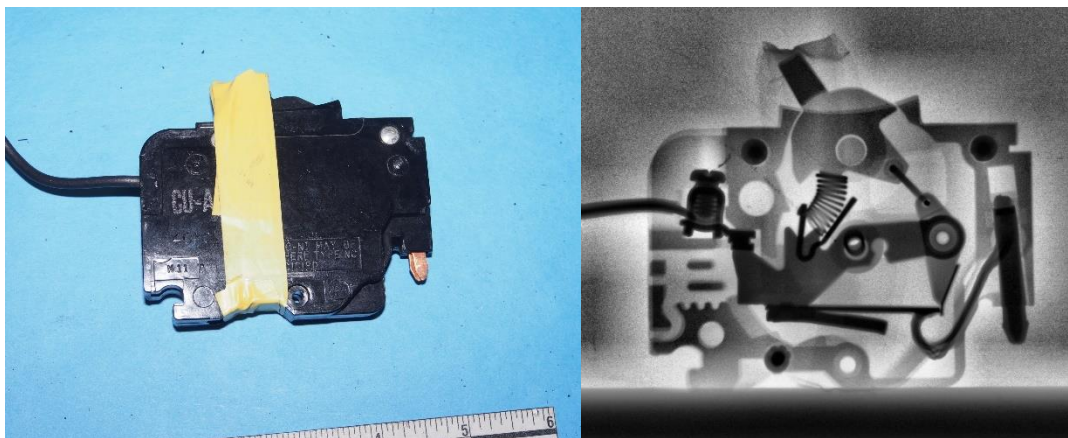


Figure 64: Evidence Item #9, Circuit Breaker #3. Examined (x-ray and visual) and forensically eliminated, per A. Litzinger.

FRT 20-047
Faraci-Lange
Estate of Charles Hollowell
192 Bells Brook Rd.
Ceres, NY
NOT TO SCALE

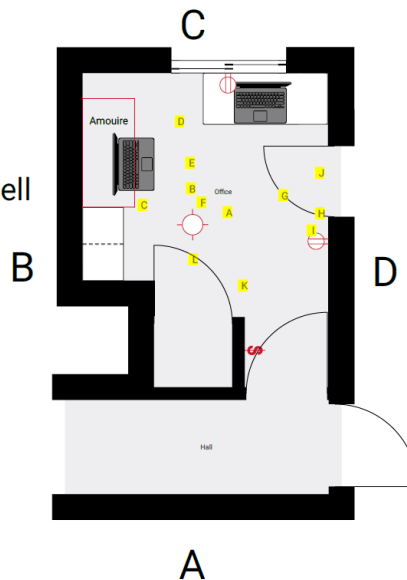


Figure 65: Scene diagram

(3) Fire Dynamics:

Fire Dynamics is described (in NFPA 921 3.3.76*) as the detailed study of how chemistry, fire science, and the engineering disciplines of fluid dynamics and heat transfer interact to influence fire behavior.

A failure of the HP Pavilion laptop system, to include the battery pack, resulted in the ejection of hot battery material that ignited combustibles located within the room of origin, including the closet. See Dr. Martin's report for further details regarding the failure of the laptop and battery system.

The fire in the closet transitioned from the incipient stage to growth stage with vertical fire plume development. Fire exited the closet, creating an upper ceiling layer of hot gases in the office. Fire moved from the office to the hallway as the room became oxygen deficient. The fire was first observed near the armoire by the insured, where she reported seeing fireballs exploding out of the laptop and items dropping from the ceiling. Ms. Marcellin escaped the home and used OnStar to call emergency services. The fire department responded to the scene and extinguished the event.

CAUSE DETERMINATION ANALYSIS:

Based on the totality of the investigation, the cause of the fire was a failure of the HP Pavilion laptop system, to include the battery pack. This failure resulted in the ejection of hot battery material that ignited combustibles located within the room of origin, to include the closet. See Dr. Martin's report for further details on the system failures within the HP Pavilion laptop and battery pack. This determination was based upon the witness statement of Carol Marcellin, and upon a systematic investigation ruling out all other ignition sources within the origin room. Ms. Marcellin observed the fire first in the area of the armoire where she described "fire balls or whatever" coming from the laptop, hitting the ceiling, and catching fire. She stated the fire was too big for her to extinguish, so she retreated. All ignition sources related to the structure's electrical system were ruled out by Andy Litzinger of FRT.

- Area of Origin: Office
- Point of Origin: HP Pavilion Laptop system, to include the battery pack
- Ignition Source: Failure of a component within the HP Pavilion Laptop system
(see Dr. Martin's report)
- First Fuels: Combustible materials within the room of origin were ignited by the ejected battery material.

- Ignition Sequence: A failure of the HP Pavilion laptop which resulted in the ejection of hot battery material. That hot material landed on, and ignited combustibles located within the room of origin, to include the closet.

19.1.1 FIRE CAUSE FACTORS NFPA 921- 2024 Edition.

“The determination of the fire cause requires the identification of those factors that were necessary for the fire to have occurred. Those factors include the presence of a competent ignition source, the type and form of the first fuel ignited, and the circumstances, such as failures or human actions, that allowed the factors to come together and start the fire.”

According to NFPA 921 and all other authoritative treatises known to this writer, a credible cause determination is based upon all of the available evidence and is achieved through the forensic elimination of all other reasonable potential causes within the area of origin. The remaining causation factor must be consistent with all known facts. The analysis of the potential ignition sources is considered in light of all of the information provided to date and their relationship to ignition and principles of fire dynamics.

NFPA 921-2024 Edition: 19.1.5 Ignition Sequence. A fuel by itself or an ignition source by itself does not create a fire. Fire results from the combination of fuel, an oxidant, and an ignition source. The investigator’s description of events, including the ignition sequence, (the factors that allowed the ignition source, fuel, and oxidant to react), can help establish the fire cause.

NFPA 921-2024 Edition: 19.4.4.3 Ignition Sequence. are times when there is no physical evidence of the ignition source found at the origin, but where an ignition sequence can logically be inferred using other data. Any determination of fire cause should be based on evidence rather than on the absence of evidence; however, there are limited circumstances when the ignition source cannot be identified, but the ignition sequence can logically be inferred. This inference may be arrived at through the testing of alternate hypotheses involving potential ignition sequences, provided that the conclusion regarding the remaining ignition sequence is consistent with all known facts (*see Chapter 4*).

POTENTIAL IGNITION SOURCES CONSIDERED WITHIN THE AREA ORIGIN:

- ✱ Smoking Materials
- ✱ Candles/Incense
- ✱ Laptop

- ✱ Building Electrical System
- ✱ Lightning
- ✱ Incendiary

Smoking Materials – Eliminated based on witness statement of occupant. Additionally, no evidence of smoking found.

Candles/Incense- Eliminated based on witness statement of occupant. Additionally, no evidence was found.

Laptop- Unspecified failure of the HP Pavilion laptop could not be eliminated. See Dr. Martin's report for more detail.

Building Electrical System- Eliminated by Andy Litzinger of FRT

Lightning- Eliminated by weather report, and by witness statement of occupant.

Incendiary- No evidence or fire patterns to support an incendiary fire.

WEATHER:

2:53 AM	31 °F	16 °F	54 %	SE	5 mph	0 mph	27.92 in	0.0 in	Cloudy
3:53 AM	32 °F	15 °F	50 %	SE	7 mph	0 mph	27.91 in	0.0 in	Cloudy
4:53 AM	32 °F	14 °F	48 %	ESE	6 mph	0 mph	27.91 in	0.0 in	Fair
5:53 AM	31 °F	15 °F	52 %	SE	5 mph	0 mph	27.91 in	0.0 in	Mostly Cloudy
6:53 AM	30 °F	16 °F	56 %	SE	6 mph	0 mph	27.89 in	0.0 in	Mostly Cloudy

Figure 66: Weather Underground History Report for Lewis Run, PA (closest for weather history, 28 miles away) on 01/24/2020

EXPOSURE DAMAGE: There was no exposure damage to other residences in the area.

CONCLUSION:

Based on the information available at this time and after conducting a systematic review of the documents provide of the fire scene, via the scientific method, which is outlined in NFPA 1033 and NFPA 921, FRT could not eliminate a failure of the HP Pavilion laptop, to include the battery pack. This failure resulted in the ejection of hot battery material that ignited combustibles located within the room of origin, to include the closet. See Dr. Martin's report for further details.

The origin was determined utilizing witness statements, fire patterns, fire dynamics, and arc survey. Based on this investigator's document review, inspection of the scene, training, education, and experience the only reliable ignition sequence that cannot be eliminated is a failure of the HP Pavilion Laptop.

Per all the known data collected, and the potential for ignition and fire spread in this event, the evidence yields one probable cause that cannot be eliminated. The probable cause of the fire that cannot be eliminated is the failure of the HP Pavilion laptop system, to include the battery pack.

NFPA 921-2024 Edition: 4.5.1 Expressions of Certainty. Someone may express an opinion to a higher or lower level of certainty. The expression is determined by the investigator's confidence in the data, in the analysis of the data, and testing of hypotheses formed.

NFPA 921-2024 Edition: 4.5.1.1 Expressions of Certainty. Two expressions of certainty commonly used are 'probable' and 'possible,' as follows:

- (1) *Probable.* This expression corresponds to being more likely true than not.
- (2) *Possible.* The hypothesis may be demonstrated to be feasible but cannot be either ruled out or declared probable. If two or more hypotheses are equally likely, then the expression must be "possible."

NFPA 921-2024 Edition: 4.5.1.2 Expressions of Certainty. If the level of certainty of an opinion is merely "suspected," the opinion does not qualify as an expert opinion. If the level of certainty is only "possible," the opinion should be specifically expressed as "possible." Only when the level of certainty is considered "probable" should an opinion be expressed with reasonable certainty.

As set forth in NFPA 921, the level of certainty describes how strongly someone holds an opinion (hypothesis). That level is determined by assessing the investigator's confidence in the data, in the analysis of the data, and testing of hypotheses formed. Based on my analysis of this instant matter, which was conducted in accordance with the provisions of NFPA 921, I have formulated my opinions (hypotheses) to a reasonable degree of scientific and engineering certainty.

The data contained in this investigation is true and accurate based on the information available at the time it was written. Findings, opinions and conclusions may change if additional data collected is discovered after this report was authored.

This report has been reviewed for conformance with accepted and tested scene processing methodology. Additionally, it has been reviewed for both form and content and was found to be in agreement with or exceed the recommendations of published materials

and standards relating to the reporting of scientific information outlined in publications such as those published by the NFPA and ASTM.

OCCUPANT INFORMATION

Owner: Carol Marcellin, Charles Hollowell

Occupants: Carol Marcellin and Charles Hollowell

FIRE INVESTIGATION DISPOSITION

This case is closed

EVIDENCE

EVIDENCE COLLECTED	LOCATION	DATE	BY WHOM	REPRESENTING
1. Battery Debris (A-L)	Office Floor	2/27/2020	ADL	Faraci Lange
2. Debris	Hall	2/27/2020	ADL	Faraci Lange
3. Debris	Hall	2/27/2020	ADL	Faraci Lange
4. Debris	Hall	2/27/2020	ADL	Faraci Lange
5. Smoke Detectors	A/B corner Office	2/27/2020	ADL	Faraci Lange
6. Laptop & Battery Debris	Armoire	2/27/2020	ADL	Faraci Lange
7. Laptop	C-Wall Desk	2/27/2020	ADL	Faraci Lange
8. Misc. Items	Office Floor	2/27/2020	ADL	Faraci Lange
9. Rec. & Ckt. Breaker	C-wall & Panel	2/27/2020	ADL	Faraci Lange
10. Bulb Remains	Office Floor	2/27/2020	ADL	Faraci Lange
11. Battery Remains	C/D corner Office	2/27/2020	ADL	Faraci Lange
12. Carpet	Hall	2/27/2020	ADL	Faraci Lange
13. Carpet	Office Closet	2/27/2020	ADL	Faraci Lange

EVIDENCE COLLECTED	LOCATION	DATE	BY WHOM	REPRESENTING
14. Carpet	Office	2/27/2020	ADL	Faraci Lange
15. Curtain	C-wall Office	2/27/2020	ADL	Faraci Lange

Figure 67: Evidence log, FRT.

Should additional data become available at a later date, Fire Research & Technology, LLC reserves its right to evaluate that new information, and adjust opinions as needed or dictated by industry standards and guidelines such as NFPA 921.

Respectfully Submitted,



Technical Review: Caitlin Marcellus

Reviewed: 10/14/2024

Manager Review: Claudia Karasinski

Reviewed: 10/15/2024

References

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Babrauskas, V., Ignition Handbook. Fire Science Publishers, Issaquah, WA, 2003.

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U.S. Department of Justice, Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), ATF Fire Research Laboratory Technical Bulletin 001, September 28, 2012.

Jason Thomas Karasinski, IAAI- CFI, NAFI- CFEI

President/Owner

Sr. Fire Analyst

585-474-3514

Jason@frtinvestigation.com

Professional Summary

Mr. Karasinski is a NFPA 1033 Nationally Pro Board-Certified Fire Investigator, IAAI- CFI, NAFI- CFEI. He currently sits on the NFPA 921 Technical Committee and is a Principal for the NFPA 1321 Fire Investigation Units (FIUs) (FIC-AAA). Mr. Karasinski held the position of President for the NY State IAAI Chapter 23 for four years. He continues to hold a seat on the Training Committee, Peer Review Committee, as well as the 921 Committee for the NY State Chapter. Presently he sits on the IAAI Training & Education Committee. Mr. Karasinski serves as a Subject Matter Expert and instructor at the National Fire Academy (NFA), National Fire Protection Association (NFPA), and Alcohol Tobacco and Firearms (ATF). He has provided advanced electrical instruction for ATF and the National Center for Explosives and Research Center. Throughout his time as a fire investigator and firefighter he has organized and conducted live burns, demonstrations, testing and training for both the public and private sectors. In 2012-2013, he was a key contributor that led the effort to successfully secure a \$267,000 grant from the Department of Homeland Security, awarded to the NYS IAAI Chapter 23.

Currently Jason is responsible for investigating fire and explosion incidents around the country. His responsibilities include:

- Origin and Cause Investigations
- Explosion Investigations
- Car Fires
- Marine/Ship Fires and Explosions
- Scene/Case Investigation
- Witness interviews
- Evidence Examinations
- Consultation on electrical failures
- Electrical failure analysis/testing
- Component failure analysis/testing
- Product failure analysis/testing
- Material testing

Professional Summary (cont.)

- Report preparation
- The collection, preservation, and processing of evidence for laboratory analysis
- Expert testimony and preparation for legal hearings pertaining to the origin and cause of fire and explosion incidents
- Peer reviews/Technical reviews
- Major Event Response Unit
- Fire Investigation Insurance Educational Programs
- Live Burn Demonstrations

Licenses & Certifications

National Pro-Board-Certified Fire Investigator / NY 2803

NAFI- Certified Fire Explosion Investigator-16053-11291

IAAI-Certified Fire Investigator- 23-121955

Professional Affiliations

- International Association of Arson Investigators (IAAI) Member
 - IAAI Recommendations for Expert Witness Courtroom Testimony Course (EWCTC) Task Group- 2011
 - IAAI 40hr IAAI-FIT Basic Fire Investigation. Subject Matter Expert, Course Development and Design 2012
 - IAAI International Training Conference (ITC) Speaker and Topics Selection Committee, Co-Chair. Orlando, FL. 2013
 - IAAI International Training Conference (ITC) Speaker and Topics Selection Committee, Co-Chair. Chicago, IL 2015
 - IAAI Insurance Training and Membership Advisory Committee, Co-Chair. 2015-2018
 - IAAI Editorial Review Board, 2016-present
 - IAAI Training & Education Committee, 2016-present
 - IAAI Marine Fire & Explosion National Certification SME (Chair) 2017-2024
- National Association Fire Investigators (NAFI) Member
- National Association of Subrogation Professionals (NASP) Member
- American Boat & Yacht Council (ABYC) Member
- New York State Chapter 23 (International Association of Arson Investigators) Member
 - New York State Chapter 23- 921 Committee, 2008- present
 - New York State Chapter 23- Training Committee, 2008-present
 - New York State Chapter 23- Quality Assurance Committee: 2007- 2008

Professional Affiliations (cont.)

- New York State Chapter 23- Director at Large: Chapter 23, 2007 – 2008
 - New York State Chapter 23- Vice President, Chapter 23, 2008-2013
 - New York State Chapter 23- President, 2013-2017
 - New York State Chapter 23- Fire Scene Magazine- Peer Review Committee 2010-present
- National Fire Protection Association (NFPA) Member
 - NFPA 921 Technical Committee (Principal) 2018-present
 - NFPA 1321 Fire Investigation Units (FIUs) (Principal) 2018-present
 - NFPA 921 Marine Chapter Task Group (Member) 2020- 2024
 - NFPA 921 Arc Mapping Task Group (Chair) 2020- 2024
 - NFPA 1321 Fire Investigation Units Chapter 5 (Chair) 2020-2024
 - 2016 – Present. National Fire Protection Association. NFPA 921 Instructor-Led Training Committee. Subject Matter Expert
 - NFPA 921 Chapter 30 Marine Task Group 2016
- International Association of Marine Investigators (IAMI) Member
- National Institute of Standards and Technology (NIST)
 - Organization of Scientific Area Committees (OSAC), Fire Scene and Explosives Subcommittee's Documentation and Report Writing Task Group (Member) 2015-present
- Central European Association of Fire Investigators

Fire Department Memberships

- Sodus Point Volunteer Fire Department Member, 2002-2003
- Wallington Fire Department Member, 2004- Present
 - Member Status- Social

Professional Experience

- Fire Research & Technology, LLC- Owner/President, Sr. Fire Analyst, 2015-present
- Wallington Fire Department- Fire Investigator, 2005-2020
- Liberty Mutual- Sr. Fire Investigator, 2008-2015
- Wallington Fire Department- President, 2008-2010

Civil & Criminal Deposition & Courtroom Testimony

- STATE OF NEW YORK SUPREME COURT: COUNTY OF ONEIDA
Civil Deposition -Index No. 2008-002797

Civil & Criminal Deposition & Courtroom Testimony (cont.)

- STATE OF NEW YORK: COUNTY OF WAYNE
Criminal Courtroom testimony- NYS vs. Russell
- STATE OF NEW YORK SUPREME COURT: COUNTY OF MONROE
Civil Deposition - Index No. 10106-09
- STATE OF NEW YORK FEDERAL COURT: COUNTY OF ONANDAGUA
Civil Deposition - Index No. 5:11-CV-340
- STATE OF NEW YORK FEDERAL COURT: WESTERN DISTRICT
Civil Deposition – 11-CV – 06027
- STATE OF ILLINOIS CENTRAL DISTRICT COURT
Expert Deposition- 13-CV-2037
- STATE OF NEW YORK FEDERAL COURT: COUNTY OF ONANDAGUA
Civil Testimony - Index No. 5:11-CV-340
- STATE OF NEW YORK SUPREME COURT: COUNTY OF ERIE
Civil Testimony- Sweet vs. National Fuel
- UNITED STATES DISTRICT COURT: SOUTHERN DISTRICT OF NEW YORK
Case no. 1.17 – CV -01052- GHW
- UNITED STATES DISTRICT COURT: WESTERN DISTRICT OF KENTUCKY
BOWLING GREEN DIVISION- CIVIL ACTION NO. 1:21-CV-00144-GNS-HBB
- UNITED STATE DISTRICT COURT: DISTRICT OF NEW HAMPSHIRE
Expert Deposition- Civil Action No. 1:23-cv-00451-AJ
- UNITED STATE DISTRICT COURT: EASTERN DISTRICT OF NEW YORK
Expert Deposition- Civil Action No. 2 :21-cv-05521

Specialized Training

- Fox Valley Technical College- Practical Property Training: Basic 101, 1999 (Tested)
- Fox Valley Technical College- Practical Property Training: Intermediate 102, 1999 (Tested)
- New York State Fire Academy- Basic Arson Awareness and Identification, 2003 (Tested)

Specialized Training (cont.)

- New York State - Advanced Instruction in Origin and Cause Determination, 2003 (Tested)
- New York State- Fire/Arson Investigation, 2004 (Tested)
- New York State- Fire Investigator Level I, 2004 (Tested)
- New York State- Fire Investigator Level II, 2004 (Tested)
- New York State Fire Academy- Fire Arson Investigation Seminar, 2004
- ATF (FLETC) Facility, New Brunswick, Georgia- IAAI Seminar: The Advanced Arson Investigative Techniques for The Insurance Industry Program, November 2004 (Tested)
- New York State- FAST Fire Training, 2004 (Tested)
- New York State- Fire Training: Firefighter Survival, 2004 (Tested)
- New York State- Fire Training: Scene Support Operations, 2004 (Tested)
- New York State- ICS Orientation (I-100) Course, 2004 (Tested)
- New Mexico Tech- Incident Response to Terrorist Bombing Awareness Training Course, 2004
- New York State Fire Investigators Winter Seminar, February 2005
- Texas A&M University- Symposium on Scientific Fire Investigation: Spoliation and Subrogation System, Texas Engineering Services Extension Service, Emergency Services Training Institute, October 2005 (Tested)
- New York State Fire Academy- Annual Fire Arson Investigation Seminar, 2005
- New York State- Hazardous Materials First Responder Operations, January 2006 (Tested)
- New York State- Incident Command System ICS 200, March 2006 (Tested)
- New York State Fire Academy- Electrical Fire Cause Determination 1, April 2006 (Tested)
- New York State Fire Academy- Electrical Fire Cause Determination 2, April 2006 (Tested)
- Wallington Fire Department- OSHA Refresher, April 2006
- New York State Association of Fire Investigators- Vehicle Fire Investigation Seminar, June 2006 (Tested)
- New York State Fire Academy- Annual Fire Investigation Seminar, 2006
- New York State Pro-Board Examination- Certified Fire Investigator (CFI NY-2803), October 2006 (Tested)
- Wallington Fire Department- OSHA Refresher, May 2007
- New York State Association of Fire Investigators- Computer Forensics & Fire Injury Seminar, June 2007

Specialized Training (cont.)

- Arc Mapping and Electrical Evidence/Explosives Recognition and Safety, October 2007 (Tested)
- Fire Findings Laboratories- Investigation of Gas and Electrical Appliance Fires, November 2007 (Tested)
- Fire Investigator Training Day- Insurance Claims Process & Criminal Investigation of Insurance Fraud: The Examination Under Oath, An Investigative Perspective, February 2008 (Tested)
- New York State Fire Investigators- Winter Seminar, Latham, NY, 2008
- Fire Findings Laboratories- Investigating Residential Dryer Fires, 2008 (Tested)
- Wallington Fire Department- OSHA Refresher, May 2008
- New York State- Spring Seminar, Niagara Falls, NY 2008
- New York State- Fire Arson Investigation Seminar, Montour Falls, NY, 2008
- New York State Fire Investigators- Spring Training Seminar: Investigation into Commercial Kitchen Fires, 2009
- Wallington Fire Department- OSHA Refresher, May 2009
- Fire and Explosion Investigations (NFPA921), Orlando, FL, December 2009
- Wallington Fire Department- OSHA Refresher, May 2010
- International Association of Arson Investigators- Effective Investigation and Testimony, October 2010
- Wallington Fire Department- OSHA Refresher, April 2011
- IAAI/ATC Annual Seminar, Las Vegas, NV, May 2011
- National Fire Academy- Subject Matter Expert: Re-write R206- 2-Week Arson School, 2012
- Wallington Fire Department- OSHA Refresher, March 2012
- ICAC 24th Arson and Fire Investigation Seminar, San Destin, FL, February 2013
- New York State- Fire Arson Investigation Seminar 12 hrs., Montour Falls, NY, 2013
- International Association of Arson Investigators- Fire Investigation Technician course (IAAI- FIT) 40 hrs., 2014
- Liberty Mutual Engineering Lab- Fire Protection Systems Training for the Fire Investigation Unit 16hrs., Wausau, WI, 2014
- National Association of Fire Investigators- Certified Fire Explosion Investigator (CFEI-16053-11291) (Tested), 2014
- International Association of Arson Investigators- Certified Fire Investigator (CFI-23-121955) (Tested), 2014
- Asbestos Awareness 6 hrs., 2015
- Northern Ohio Arson Seminar- Arson Detection: Legal Aspects & Bomb Detection 9 hrs., 2016

- Practical Considerations Affecting Fire Loss Investigation & Litigation 2 hrs., Columbus, OH, 2016
- Asbestos Awareness 2 hrs., 2017
- New York State- Boater Safety Course 8 hrs., 2017 (Tested)
- Fire Research & Technology, LLC- Asbestos Awareness 2 hrs., 2018
- Advanced Electrical & Appliance Training Seminar 8 hrs., 2018 (Tested)
- Fire Research & Technology, LLC- Asbestos Awareness 2 hrs., 2019 (Tested)
- Fire Research & Technology, LLC- Asbestos Awareness 2 hrs., 2020 (Tested)
- Fire Research & Technology, LLC- Asbestos Awareness 2 hrs., 2021 (Tested)
- American Boat & Yacht Council (ABYC)- AD Dock Pedestal Testing 1 CEU, 2/9/2021 Untested
- Fire Research & Technology, LLC- Asbestos Awareness 2 hrs., 2022 (Tested)
- Fire Science and Litigation Seminar. McCoy Leavitt Laskey LLC. 6 hrs., 2022
- Modern Lighting: Halogens, CFLs and LEDs 2 hrs., 2022
- The life of a fire claim. From first notice to completion of a fire claim 2 hrs., 2022
- California- Public Utility Commission Explosion Training Instructor, 6 hrs., June 2023
- Asbestos Awareness 2 hrs., 2023 (Tested)
- 2023 FRT Seminar, "Beyond Fire Scene, Key Strategies for the Testifying Investigator" 2hrs.
- 2023 Seminar, "Compartment Fire Dynamics and Time Analysis" 2 hrs.
- American Boat & Yacht Council (ABYC)- Marine Law Symposium 2024 6 CEU's, 2/29/24 Untested
- CFITrainer.net- Fire Effects Part 1: Heat Effects of Fuels 3 hrs. (Tested) 9/7/24
- CFITrainer.net- Fire Effects Part 2: Combustion By-Products Effects 3 hrs. (Tested) 9/7/24
- CFITrainer.net- Understanding Fire Through the Candle Experiments 4 hrs. (Tested) 9/8/24
- CFITrainer.net- Accreditation, Certification, and Certificates 3 hrs. (Tested) 9/8/24

Formal Education

- Lambuth University- Bachelor of Science- Business, 1995

Instructional Leadership

- 2007 ATF/RFD/MCFB/ Liberty Mutual October 2007 Fire Investigator Training Day Seminar, Arc Mapping and Electrical Evidence, Rochester, NY- Facilitator/Presenter, 6 hrs.
- 2008 ATF/Liberty Mutual Structure Demonstration Burns, Brooklyn, CT- Facilitator/Presenter, 16 hrs.
- 2008 ATF/Liberty Mutual structure demonstration burns, Webster, NY- Facilitator/Presenter, 16 hrs.
- 2009 Liberty Mutual, Origin and Cause 101, Irving, TX, 4 hrs.

Instructional Leadership (cont.)

- 2009 ATF, Liberty Mutual, Forensic Failure Analysis and Dutchess County: Advanced Origin and Cause, Live Burn Demonstrations, Arc Mapping, Fire Dynamics, Report Writing, & Electrical 101-Facilitator/Presenter, 8 hrs.
- 2010 Wright Group, Liberty Mutual, and ATF; Advanced Origin and Cause, Pod Live Burn demonstrations, Arc Mapping, Fire Dynamics, Electrical 101, Hazmat, and Public Sector Relationships- Facilitator/Presenter, 36 hrs.
- 2010 ATF, Liberty Mutual, Forensic Failure Analysis: Advanced Origin and Cause, Wayne County Sheriff's Office, NY State Police & Newark PD- Facilitator/Presenter, 8 hrs.
- 2010 ATF, Liberty Mutual, Forensic Failure Analysis: Advanced Origin and Cause, Arc Mapping, Fire Dynamics, Report Writing, Pod Live Burn Demonstrations and Electrical 101, Nassau County Fire Marshal's Office- Facilitator/Presenter, 8 hrs.
- 2010 Property Loss Research Bureau (PLRB Large Loss National Conference) Wright Group, Liberty Mutual, Cozen O'Connor: Successful Origin & Cause from Start to Finish- Facilitator/Presenter, 4 hrs.
- 2011 Wright Group, Liberty Mutual, and ATF: Advanced Origin and Cause, Pod Live Burn Demonstrations, Arc Mapping, Fire Dynamics, Electrical 101, Spoliation & Public Sector Relationships- Facilitator/Presenter, 36 hrs.
- 2011 ATF, Liberty Mutual, Forensic Failure Analysis: Advanced Origin and Cause, Arc Mapping, Fire Dynamics, Report Writing, Pod Live Burn Demonstrations and Electrical 101, Oneida County Fire Chiefs/Investigators Association- Facilitator/Presenter, 16 hrs.
- 2011 Wright Group, Liberty Mutual, and ATF: Advanced Vehicle Fire Investigations, Pod Live Burn Demonstrations, 4 Vehicle Fires, Fire Dynamics, Ventilation, Collection Methods, ASTM, Spoliation- Facilitator/Trainer, 16 hrs.
- 2011 Property Loss Research Bureau (PLRB Large Loss National Conference) Liberty Mutual and ATF: Investigative Approach to Large Fire Scene Management- Facilitator/Trainer, 4 hrs.
- 2012 International Association of Arson Investigators (IAAI): "Who Are You Going to Call" NYFD- Presenter/ Panel Discussion, 2 hrs.
- 2012 "Vehicle Fire Investigations", Oneida County Origin and Cause Team, ATF, Forensic Failure Analysis, GFI Investigations, and Liberty Mutual: Live Burn Demonstrations, 3 Vehicles, 1 Garage Fire with Vehicle- Co- Presenter on Fire Dynamics with ATF
- 2012 "Arson/Fire Investigation for Attorneys" ATF and Liberty Mutual: Basic Fire Dynamics and Origin & Cause Investigation, Legal Aspects Unique to Arson, Evidence Analysis & Presentation, Trial Preparation/Vetting the Expert Witness, Trial Tactics, Insurance/Financial Investigations, Evidence Collection and Spoliation, NFPA 921 & 1033, & the

Instructional Leadership (cont.)

Scientific Method. 2 Live Burn Demonstrations, Cigarette Tests, and Ignitable Liquid Testing- Facilitator/Presenter, CLE Credits 24 hrs.

- 2012 Liberty Mutual, Denver, CO, IRIS Investigations: Advanced Origin and Cause, Arc Mapping, Fire Dynamics, 3 Pod Live Burn demonstrations, Electrical Field Testing, Electrical 101, and Applying the Scientific Method- Facilitator/Presenter, 30 hrs.
- 2013 Liberty Mutual, National Fire Academy: Advanced Origin and Cause, Arc Mapping, Fire Dynamics, 2 Live Burn demonstrations, Electrical Field Testing, Basic Electricity, and Applying the Scientific Method- 30 hrs., Facilitator/ Presenter
- Instructor for the U.S. Fire Administration's National Fire Academy (NFA)
 - Subject Matter Expert, Course Development and Design. United States Fire Administration (NFA) Fire/Arson Origin and Cause Investigations 2-week seminar (R0206) 2013
 - Approved Instructor- United States Fire Administration (National Fire Academy)
 - 776 - Fire Investigation: Electrical Systems
 - 778 - Fire Investigation: Technical Aspects
 - 772 - Fire Investigation: Essentials
 - 740 - Case Preparation & Testimony
 - 770 – Fire Investigation: First Responder
- Instructor for the Bureau of Alcohol, Tobacco, Firearms and Explosives
 - Approved Instructor- Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) 40hr R0255- Electrical Aspects of Fire Investigation.
- Instructor for the National Fire Protection Association
 - Approved Instructor- National Fire Protection Association- “Using NFPA 921 to Meet the Professional Qualifications for Fire Investigator in NFPA 1033
- Instructor for the National Fire Protection Association (NFPA)
 - Subject Matter Expert, Course Development and Design. National Fire Protection Association (NFPA). Using NFPA 921 to meet the Professional Qualifications for Fire Investigator in NFPA 1033
- 2014 “IAAI FIT” Monroe County Law Enforcement and Fire Training Facility- Presenter, 8 hr. Origin and Cause, 8 hr. Electrical Block
- 2014 “IAAI FIT” Colony Fire Training Facility- Presenter 8 hr. Origin and Cause, 8 hr. Electrical Block
- 2014 NYS Association of Fire Investigators. Co-Presented 8hrs Electrical block (Orange County, NY) which included a live burn, arc mapping demonstration, electrical failure demonstration(s), material testing, and appliance testing

Instructional Leadership (cont.)

- 2014 NYS Association of Fire Investigators. Co-Presented 8hrs Electrical block (Killington, Vermont) which included, arc mapping demonstration, electrical failure demonstration(s), material testing and appliance testing
- 2014 NYS Association of Fire Investigators. Co-Presented 8hrs Electrical block (Buffalo, NY) which included a live burn, arc mapping demonstration, electrical failure demonstration(s), material testing, and appliance testing
- 2014 NYS Association of Fire Investigators. Co-Presented 8hrs Electrical block (Watertown, NY) which included a live burn, arc mapping demonstration, electrical failure demonstration(s), material testing, and appliance testing. 4hrs
- 2014 Rainbow International Annual Seminar. (Orlando, FL) Presented Fire Scene Spoliation. 1hr
- 2014 Virginia IAAI Annual Seminar. Co-Presented Public vs. Private, Fatal Fires and LODD. 12hrs
- 2014 National Fire Academy- Instructor R255 Electrical Aspects of Fire Investigation. 40hrs
- 2015 International Association of Arson Investigators. Fire Investigation Technician course 40 hrs. (IAAI- FIT) Maryland
- 2015 New York State Special Investigations Organization. Presented The Scientific Method & Fire Investigation 2hrs.
- 2015 NYS Association of Fire Investigators-A Confluence of Uncertainties NFPA 921's Missteps on Process of Elimination & Negative Corpus. Co Presented. 4hrs
- 2015 International Association of Arson Investigators- IAAI-FIT. 9hrs of instruction. Electrical block and The Scientific Method. Chicago, IL
- 2015 Loss Executives Association (LEA). "Emerging Trends & Developments in Subrogation." 2hrs. Newport, RI
- 2015 National Fire Academy (NFA). "R0255- Electrical Aspects of Fire Investigation." ATF-CFIC class of 2017. 40hrs. Emmitsburg, MD
- 2015 National Center for Explosives Training and Research (NCETR) "R0255 Electrical Aspects of Fire Investigation" ATF-CFIC class of 2016. 40hrs, Redstone Arsenal. Huntsville, AL
- 2015 Buffalo Claims Association. Fire Investigation & Fire Litigation. Buffalo, NY. 2hrs
- 2015 Bureau of Alcohol, Tobacco, Firearms and Explosives. Arson for Prosecutors School. 24hrs. Live Burn and Electrical Aspects. New York City, NY
- 2015 New Jersey Special Investigations Association. (NJSIA) A Case Study In- The Scientific Method. 1hr Atlantic City, NJ

- 2015 International Association of Arson Investigators. Fire Investigation Technician course 40 hrs. (IAAI- FIT) Huntsville, AL. National Center for Explosives Training and Research (NCETR)
- 2016 Northern Ohio Arson Seminar and Division of State Fire Marshal. Electrical and Appliance Aspects in Fire Investigation. Presented 8hrs.
- 2016 National Association of Subrogation Professionals- NASP Introduction to Fire Science. Co-Presented Podcast 1hr
- 2016 New York Central Mutual- Fire Litigation Buffalo, NY. 3hrs
- 2016 International Association of Arson Investigators- IAAI-FIT. 9hrs of instruction. Electrical block and The Scientific Method. Orlando, FL
- 2016 – Denver Fire Department and Alcohol Tobacco and Firearms. Advanced Fire Investigation Seminar. Investigating Electrical Fire Causations. Denver, Colorado, 6hrs of instruction
- 2016 Farm Family- 2hrs. ‘What Does Undetermined Really Mean
- 2016 State Auto- 4hrs. NFPA 921/1033- An Update and Understanding from both the Private and Public Sector Views & Scientific Method
- 2016 IAAI West Virginia Chapter. “Evaluation of Electrical Fire Causes.” 16hrs
- 2016 International Association of Arson Investigators. Fire Investigation Technician course 40 hrs. (IAAI- FIT) Huntsville, AL. National Center for Explosives Training and Research (NCETR)
- 2017 International Training Conference- International Association of Arson Investigators. Fire Investigation Technician course 40 hrs. (IAAI- FIT)
- 2017 International Training Conference- International Association of Arson Investigators. Vetting & Selecting the Right Experts and Attorneys 2hrs
- 2017 International Training Conference- International Association of Arson Investigators. Presenting the Fire Science Case to a Jury: How to Win Friends & Influence People. 2hrs
- 2017 Using NFPA 921 to Meet the Professional Qualifications for Fire Investigator in NFPA 1033. 16hrs National Fire Protection Association. 1 Batterymarch Park. Quincy, MA. Tested
- 2017 Illinois State Chapter of the International Association of Arson Investigators. Presenting 921/1033 2017 Updates, Arc Mapping, & Appliances Failures. 8hrs
- 2017 San Diego, CA. Honda Inc. – Car fire investigations, Spoliation Issues, live burns of 10 Honda Vehicles with hands on groups conducting individual O/C Inv. 16 hrs.
- 2017 Connecticut, University of New Haven, Master of Fire Investigation Program- Appliance Fire and Basic Electricity. Guest speaker 2hrs. Tested
- 2017 “Using NFPA 921 to Meet the Professional Qualifications for Fire Investigator in NFPA 1033”. National Fire Protection Association. Seattle, WA. 16hrs. Tested

Instructional Leadership (cont.)

- 2017 “Using NFPA 921 to Meet the Professional Qualifications for Fire Investigator in NFPA 1033”. National Fire Protection Association. Orlando, FL. 16hrs. Tested
- 2018 “Using NFPA 921 to Meet the Professional Qualifications for Fire Investigator in NFPA 1033”. National Fire Protection Association. Rhode Island FD Training Center, RI. 16hrs. Tested
- 2018 “Fire Investigation, Explosion Dynamics, Meeting NFPA 921/1033 Requirements” Washington State Gas Utility Commission. Washington State, WA. 32hrs. Tested
- 2018 “Fire Scene Evidence & Spoliation”. CPCU Rochester, NY 2hrs.
- 2018 “The Scientific Method for SIU Fire Investigations” NYSSIU & NYACT Training Meeting 1hr.
- 2018 “Study of Appliances Failures for Causation” Fire Dynamics and Flame Spread Analysis” Live burns to include pod, Arc tests, classroom walk thru, and ignitable liquid pour pattern demonstration. Michigan State OCAAFII Chapter. 16hrs.
- 2018 “The Scientific Method & Fire Investigation” ANPAC. Springfield, MO. 2hrs.
- 2018 “Using NFPA 921 to Meet the Professional Qualifications for Fire Investigator in NFPA 1033”. National Fire Protection Association. Nashville, TN. 16hrs. Tested
- 2018 “Using Technology to Avoid Spoliation and Enhance Trial Presentation” Co Presenter with Cozen & O’Connor. 1hr. Podcast. Omaha, Nebraska
- 2018 “Using NFPA 921 to Meet the Professional Qualifications for Fire Investigator in NFPA 1033”. National Fire Protection Association. Orlando, FL. 16hrs. Tested
- 2018 CFI Trainer Online Course “Evidence Examination: What Happens at the Lab”- 4 hrs., Tested
- 2018 CFI Trainer Online Course “What the Insurance Professional Needs to Know About Fire Investigation”- 3 hrs., Tested
- 2019 “Marine Fire & Explosion Investigations” International Association of Arson Investigators. Baton Rouge, LA. 20hrs. Tested
- 2019 “Study of Appliances Failures for Causation, Arc Mapping and Fire Dynamics” Morgantown, WV 8hrs.
- 2019 “Vehicle Fires” Documentation and Electricity” Live burn 12 vehicles and 4 pieces of power equipment. Greensburg, IN 32hrs
- 2019 “772 - Fire Investigation: Essentials” – National Fire Academy 2 weeks.
- 2020 “Marine Law Symposium” American Boat Yacht Council 1hr. Vetting & Selecting The right experts and attorneys
- 2020 “NFPA 921- 2021 Edition and Fire Investigation”- 4 hrs., Fire Explosion Consultants. Logan, OH
- 2021 “Marine Fire & Explosion Investigations” International Association of Arson Investigators. Beauford, SC. 20hrs. Tested

Instructional Leadership (cont.)

- 2022 “Marine Fire & Explosion Investigations” International Association of Arson Investigators. Beauford, SC. 20hrs. Tested
- 2022 “We’re Gonna Need a Bigger Boat Unique Challenges Marine and Non-Structural Fires” Jacksonville, FL. 1hr
- 2023 “Marine Fire & Explosion Investigations” International Association of Arson Investigators.
- Portland, OR. 20hrs. Tested
- April 2023 “Solar Panel Fires” Hartford, CT. 2hrs.
- 2023 “Explosion Training” Instructor Public Utilities Commission, CA. 6hrs.
- 2023 San Diego, CA. Honda Inc. – Car fire investigations, Spoliation Issues, Electrical, Lithium-Ion Battery failure, live burns of 10 Honda Vehicles with hands on groups conducting individual O/C Inv. 24 hrs.
- 2024 “You’re Gonna Need a Bigger Boat: Unique Challenges Presented by Marine Fires” Annapolis, MD 1 hr.
- 2024 “Marine Fire & Explosion Investigations” International Association of Arson Investigators.
Miami, FL. 20hrs. Tested

Awards/Recognition

- Awarded Certificate of Appreciation by the International Association of Arson Investigators (IAAI) for participating in the task group that developed and implemented the 40 hour “Fundamentals of Fire Investigation” course.
- Wallington Fire Department 5-year service award, 2009
- Liberty Mutual’s recipient of the Prestige Chairman’s Award, 2009
- Wallington Fire Department 10-year service award, 2014
- Letter of Recognition, New York State Police Major, Mark Koss, July 2010

Publications

Authored:

- Arc Mapping “An Explanation and Example,” Spring 2009, Fire Scene Magazine (a publication of the New York State Chapter 23 of the IAAI) Co - Author
- Food for Thought “NFPA 921 Report on Proposal’s (ROP)” Summer 2010 Fire Scene Magazine (a publication of the New York State Chapter 23 of the IAAI) Co - Author

Publications (cont.)

- Food for Thought “Witness Interviews” Fall 2010 Fire Scene Magazine (a publication of the New York State Chapter 23 of the IAAI) Co – Author
- “NFPA 1033 Requirements for Fire Investigators- A Basic Guide” Winter 2010 Fire Scene Magazine (a publication of the New York State Chapter 23 of the IAAI) Co- Author
- Food for Thought “A Ventilation Approach to Origin Consideration” Spring 2012 Fire Scene Magazine (a publication of the New York State Chapter 23 of the IAAI) Co- Author
- “Fire Scene Preservation” Training module. A publication of the New York Chapter 23 of the IAAI. Co- Author. 2014

Authored:

- “Electrical Causation for the Fire Officer” Training module. A publication of the New York Chapter 23 of the IAAI. Author. 2014
- “Arc Artifact Survivability - A Simple Burn” A publication of the New York Chapter 23 of the IAAI. Co- Author. 2014
- “Preliminary Results of the Investigation into Self Actuation of Light Switches during Fire Exposure.” A publication of the New York Chapter 23 of the IAAI. Co- Author. 2015

Interviewed for:**Liberty Lines Magazine**

- Great Escape
- Too Hot to Handle
- Distracted Cooking



Consultant Fee Schedule

O&C Services	Rate/Hr.
Sr. Fire Consultant	\$250.00
Sr. Fire Investigator	\$195.00
Fire Investigator	\$165.00
Marine Fire & Explosion Consultant	\$195.00
Evidence Technician	\$95.00

Engineering Services	Rate/Hr.
Sr. Forensic Battery & Mechanical Consultant	\$395.00
Sr. Forensic Mechanical Consultant	\$225.00
Forensic Mechanical Consultant	\$195.00
Sr. Forensic Electrical Consultant	\$225.00
Sr. Automotive & Heavy Equipment Consultant	\$225.00
Automotive & Heavy Equipment Consultant	\$195.00
Mechanical HVAC Expert	\$195.00

Expert Testimony	Rate/Hr.
Sr. Fire Consultant	\$495.00
Sr. Fire Investigator	\$395.00
Fire Investigator	\$350.00
Sr. Forensic Mechanical Consultant	\$395.00
Forensic Mechanical Consultant	\$325.00
Sr. Forensic Electrical Consultant	\$450.00
Sr. Automotive & Heavy Equipment Consultant	\$325.00
Automotive & Heavy Equipment Consultant	\$295.00

Evidence Storage	Quarterly Rate
Small (Up to 12" Square)	\$100.00
Medium (1/4 Shelf)	\$150.00
Medium-Large (1/2 Shelf)	\$200.00
Large (3/4 Shelf)	\$250.00
Pallet/Skid (4x4)	\$300.00
Extra Large	\$500.00
Outdoor Storage	\$15/day

Forensic Laboratory Services	Rate
Lab Rental- 1/2 day	\$750.00
Lab Rental- Full Day	\$900.00
Lab Restocking Fee	\$150/Day- 1-10 People \$250/Day 11-20 People
Laboratory Oven Testing	\$500.00
Keyence 3D Digital Scope	\$400- 1/2 day \$800- full day
Digital X-Rays	\$100 per image
Ad Hoc Services	Rate/Hr.
Drone Usage	\$95.00
Chimney Inspection with Camera & Video	\$125.00
Chimney Inspection- Formal Report	\$700.00
Matterport Scan	\$95.00
Matterport Upload	\$50.00
Evidence Disposal	Flat fee
Small (Up to 12" Square)	\$35.00
Medium (1/4 Shelf)	\$75.00
Medium-Large (1/2 Shelf)	\$100.00
Large (3/4 Shelf)	\$175.00
Pallet/Skid (4x4)	\$200.00
Extra Large	\$250.00
Outdoor Storage	Based on weight/volume